

Exhibit A



US006048594A

United States Patent [19]

Greene

[11] Patent Number: 6,048,594

[45] Date of Patent: *Apr. 11, 2000

[54] FILLED COMPOSITE STRUCTURE

[75] Inventor: Robert H. Greene, Lancaster, Pa.

[73] Assignee: Lancaster Composite, Columbia, Pa.

[*] Notice: This patent is subject to a terminal disclaimer.

[21] Appl. No.: 09/325,631

[22] Filed: Jun. 4, 1999

Related U.S. Application Data

[63] Continuation of application No. 09/013,904, Jan. 27, 1998, which is a continuation-in-part of application No. 08/770,111, Dec. 20, 1996, Pat. No. 5,800,889, which is a continuation-in-part of application No. 07/915,315, Jul. 20, 1992, abandoned.

[51] Int. Cl.⁷ B29D 22/00

[52] U.S. Cl. 428/36.91; 428/36.4; 428/34.5; 52/722; 52/723; 52/724; 52/725

[58] Field of Search 428/36.91, 34.5, 428/36.4; 52/722, 723, 724, 725; 106/772

[56] References Cited

U.S. PATENT DOCUMENTS

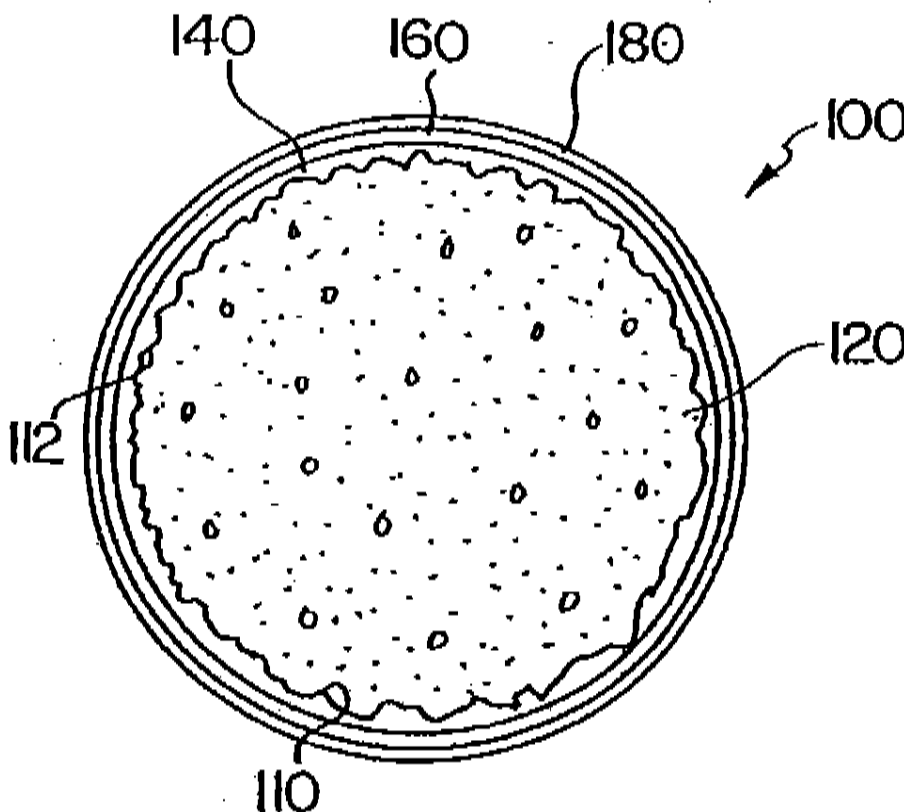
3,957,250	5/1976	Murphy	
4,157,263	6/1979	Chaises et al.	
4,939,037	7/1990	Zion et al.	
5,770,276	6/1998	Greene	428/36.91
5,800,889	9/1998	Greene	428/36.91

Primary Examiner—Michael A. Williamson
 Attorney, Agent, or Firm—Parkas & Manelli Stemberger, E.J.

[57] ABSTRACT

A filled structure includes a fiber reinforced resinous hollow structure having a tensile strength of at least 30,000 psi, an inside surface forming a boundary which encloses a space, and a hard core within the space. The hard core has a density of at least 35 pounds per cubic foot and a compressive strength of at least 1500 psi. The hard core is formed from a mixture of particulate cementitious material and liquid such that when the mixture hardens, the hard core is mechanically locked to the inside surface of the hollow structure.

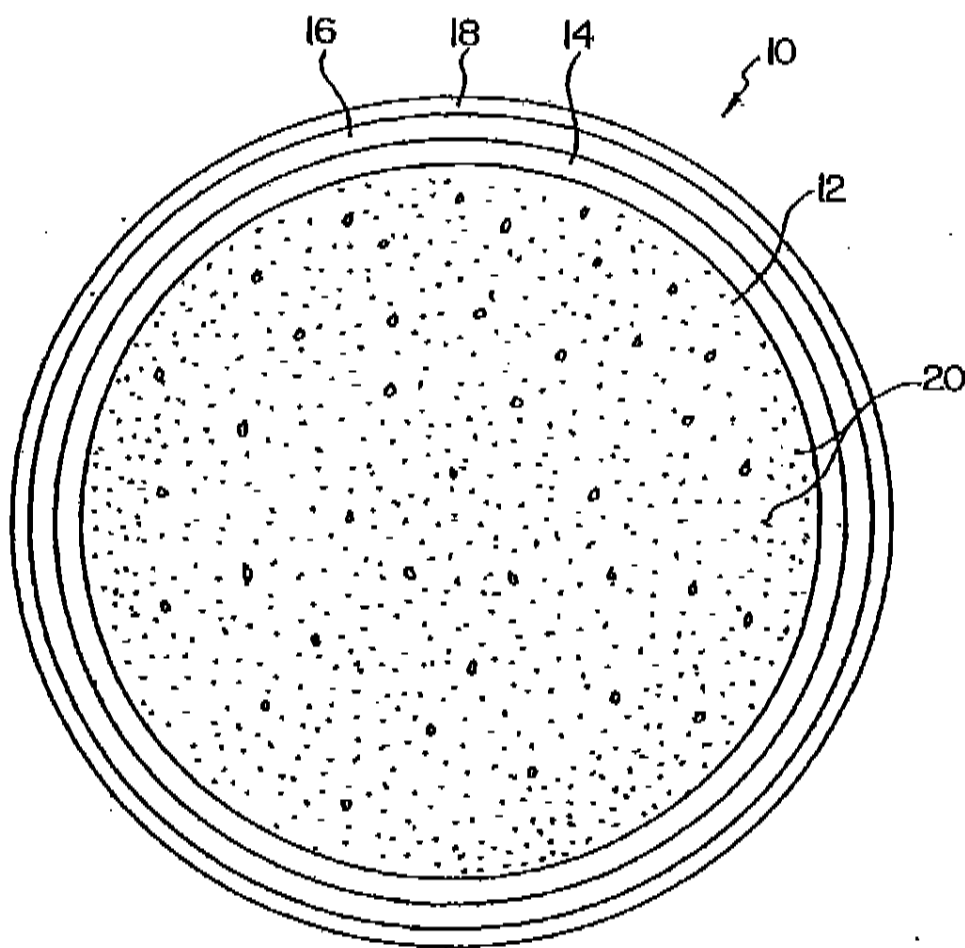
12 Claims, 3 Drawing Sheets



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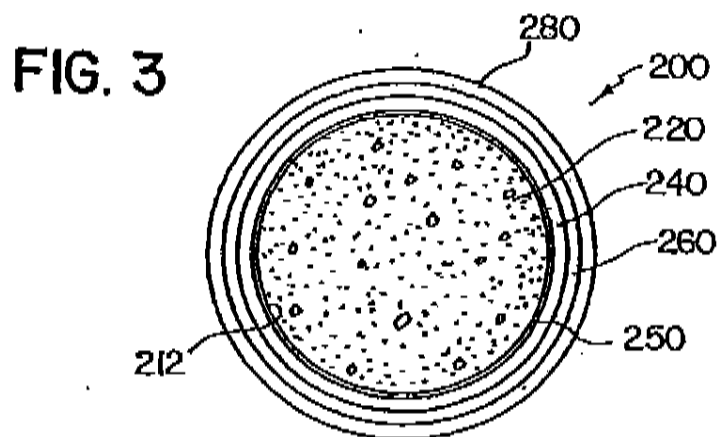
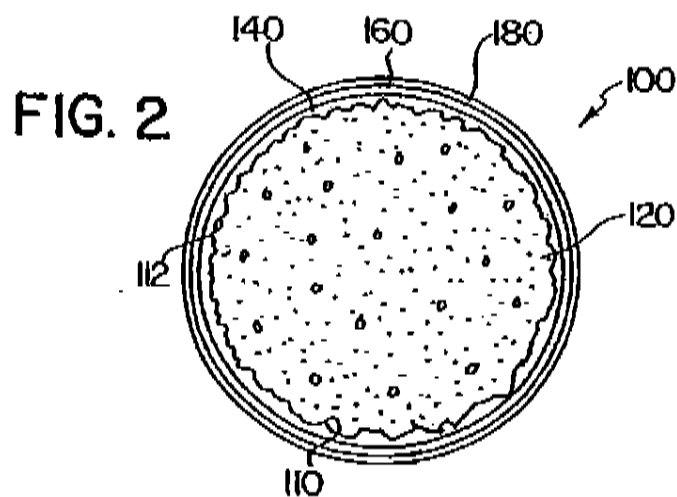
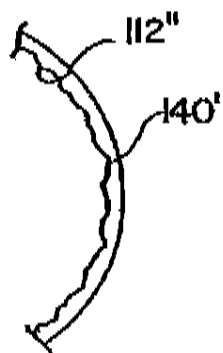
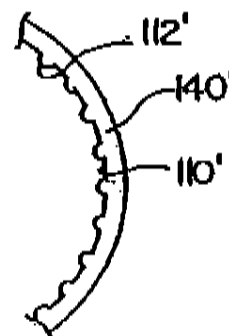
6,048,594**FIG. 1**

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**FIG. 4a****FIG. 4b**

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FIG. 5a

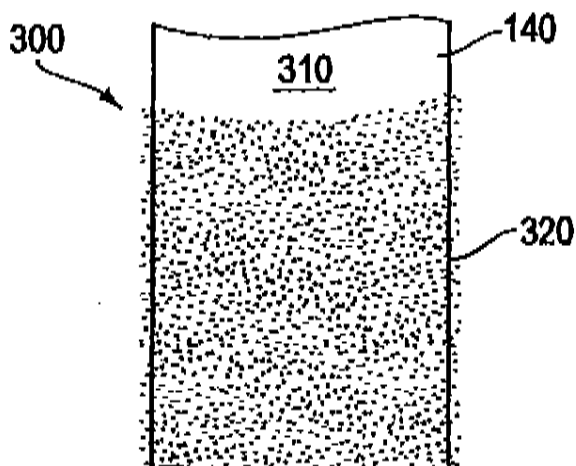
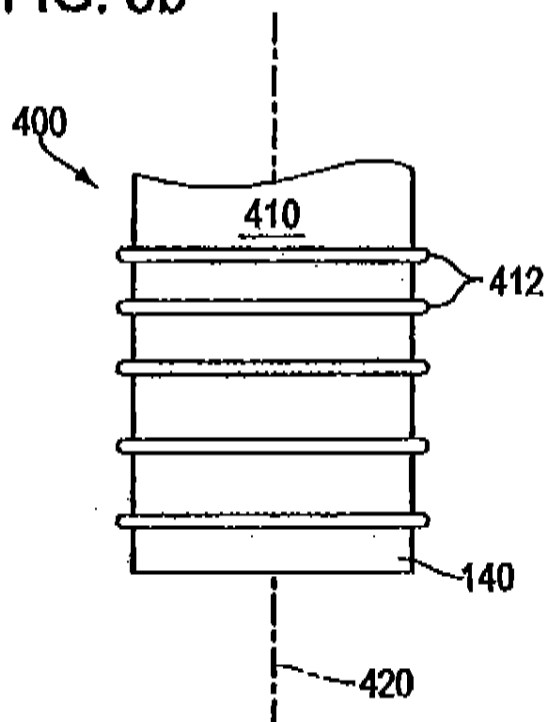


FIG. 5b



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FILLED COMPOSITE STRUCTURE

This is a continuation of my U.S. application Ser. No. 09/013,904 filed Jan. 27, 1998, which is a continuation-in-part of my U.S. application Ser. No. 08/770,111 filed Dec. 20, 1996 (U.S. Pat. Ser. No. 5,800,889), which is a continuation-in-part of U.S. application Ser. No. 07/915,315, filed on Jul. 20, 1992, now abandoned.

BACKGROUND OF THE INVENTION

This invention deals generally with stock material, and more specifically with filled hollow structures such as light poles, fence posts and pilings constructed of plastic or fiberglass.

The benefits of plastic and fiberglass for articles which are used where they are subject to corrosion are generally well recognized. Structures using such materials are light weight, strong and attractive. They can be made with color integrated into the material so that they do not need frequent painting during their use, and possibly their greatest asset is the inherent chemical resistance of the material. A fiberglass or plastic structure such as a fence post can be expected to last as long as anyone wants it to, even in the most severe environment, with no sign of deterioration, and it will not require any maintenance.

Unfortunately, the major limitation on the availability of such pole type fiberglass or plastic structures has been the cost and difficulty involved in their manufacture. One typical method of fiberglass construction is the forming of the fiberglass into a specific shape by wrapping multiple layers of fiberglass fabric on the outside of a core and impregnating the fabric with resin or epoxy, however such manufacturing methods are very expensive because they involve a great deal of hand labor.

Another approach, particularly to the construction of cylindrical structures, is to use preformed fiberglass or plastic pipe. However, such pole structures are not strong enough for most applications unless the pipe is very thick or the structure includes wood or metal reinforcing, and both of these approaches raise the cost of fiberglass and plastic poles so that they are not competitive with conventional metal poles.

One approach to reinforcing fiberglass or plastic pipe so it can be used as a structural member has been the use of fillers which are poured into the inside of the pipe, and then harden into a core. Fillers have been suggested which include wood with an adhesive binder (U.S. Pat. No. 4,602,765 by Lopez) and rigid foam or concrete (U.S. Pat. No. 3,957,250 by Murphy), but these approaches do not furnish strength comparable to metal poles.

Accordingly, there is a need to provide a fiber reinforced pole filled with a cementitious material to provide a piling having strengths similar to that of a steel piling.

SUMMARY OF THE INVENTION

An object of the invention is to fulfill the need referred to above. In accordance with the principles of the present invention, this object is attained by providing a filled structure characterized by the combination of high compressive strength and tensile strength to allow a high bending load. The filled structure includes a fiber reinforced resinous hollow structure having a tensile strength of at least 30,000 psi, an inside surface forming a boundary which encloses a space, and a hard core within the space. The hard core has a density of at least 35 pounds per cubic foot and a

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compressive strength of at least 1500 psi. The hard core is formed from a mixture of particulate cementitious material and liquid such that when the mixture hardens, the hard core is joined securely to the inside surface of the hollow structure.

Other objects, features and characteristics of the present invention, as well as the methods of operation and functional of the related elements of the structure, the combination of parts and economies of manufacture, will become more apparent upon consideration of the following detailed description and appended claims with reference to the accompanying drawings, all of which form a part of the specification.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an end view across the axis of an embodiment of the invention.

FIG. 2 is an end view across the axis of another embodiment of the invention.

FIG. 3 is an end view across the axis of yet another embodiment of the invention.

FIG. 4a is a partial end view of concave ridges formed in a pole of the invention.

FIG. 4b is a partial end view of convex ridges formed in a pole of the invention.

FIG. 5a is a front view of a lower portion of another embodiment of the invention showing an abrasive adhesive coating thereon.

FIG. 5b is a front view of a lower portion of another embodiment of the invention, showing fiber rovings wrapped so as to extend from an outer surface thereof.

DETAILED DESCRIPTION OF THE INVENTION

FIG. 1 shows an end view across the axis of pole 10 of an embodiment of the invention. Pole 10 is preferably formed of four distinct materials, one of which, core 12, takes on a particular significance because of the manner in which it is formed. Core 12 is encased within pipe 14 which is covered by veil 16, on top of which is placed protective surface coating 18. Each of the four parts of composite pole structure 10 adds a particular characteristic to the pole structure, and together they furnish a pole of superior strength and durability which can be produced economically. In the broadest aspect of the invention, the veil 16 and coating 18 need not be provided.

The construction of pole 10 is essentially based upon the filling of pipe 14 with core 12, but core 12 has unique properties which produce a non-metallic pole with strength equivalent to that of steel poles. Core 12 is a Portland cement based product with admixtures which enables the mixture to expand as it hardens, or at least limit shrinkage of the mixture as it hardens.

In one embodiment of the invention, it is important that the core material normally expand in order that it have a permanent positive stress and produce a force fit with exterior pipe 14. It is also vital that the hardened core have significant strength, which is best indicated by a compressive strength rating of at least 1500 psi, so that it adds significant strength to the structure and does not act to merely fill the interior space of the pipe. The load/force developed as the core 12 hardens must, however, be less than the structural strength of pipe 14 in order to prevent the forces produced by the attempted expansion during hardening of core 12 from distorting and/or substantially weakening pipe 14 as it restrains the expansion of core 12.

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In a preferred embodiment, cylindrical pipe 14 has a two inch outer diameter with 0.030 inch wall thickness up to a ninety-six inch diameter with at least 0.500 inch wall thickness. The pipe 14 is constructed with a standard polyester, epoxy or vinyl ester resin base, reinforced with fibrous roving, chop, or woven mat throughout its entire thickness. Such a material has a tensile strength of at least 30,000 psi. Added bending strength can be attained if the significant portion of the fibrous roving are oriented to be at an angle of at least 45 degrees to the axis of the pole or oriented generally along the axis of the pole. The fibrous rovings in the illustrated embodiment is fiberglass. It can be appreciated that other fibrous rovings such as carbon, etc. may be used.

As with all fiberglass and resin structures, color pigments may be added during manufacture of pipe 14 to produce consistent color throughout the entire pipe.

It is also advantageous to produce veil 16 on the exterior surface of pipe 14 when it is being manufactured. Veil 16 is a layer of polyester or other material cloth impregnated with resin. The production of such a veil is well understood by those skilled in the art of fiberglass construction. Veil 16 protects the fiberglass against ultraviolet radiation, provides a moisture barrier, protects against blooming of the surface fibers of the fiberglass and also adds strength to pole 10.

The core 12 is composed primarily of a mixture of stone, sand, water, and Portland-type cement. In one embodiment of the invention, the specific material used is Type I Portland-type cement as manufactured by the Lehigh Cement Co. The stone component could be solid limestone, as commonly found at many local quarries, or lightweight type aggregate as produced, for example, by Solite Corp. The sand component is clean washed and specifically graded round silica material as is available from many local sand quarries. Normal potable water is used and other cementitious products may be employed to promote expansion or at least limit shrinkage of the core upon hardening. For example, expansion additives such as INTRAPLAST N manufactured by Silca (plastic state expansion), or CONEX, as manufactured by IM Cement Co. (early hardened state expansion) may be used in the core. Alternatively, a standard expansion agent such as shirumina hydrate may be employed in the core, or the core may comprise Type K cement.

When hardened this formula yields a compressive strength of 1500-15,000 psi. Moreover, one particular formula normally expands about 0.1-10 percent upon hardening, except that it is restrained by the hollow tube 14 and therefore provides an exceptionally strong force fit with hollow tube or pipe 14. The density of such a core is at least 35 pounds per cubic foot. Instead of expanding, the mixture may be formulated such that shrinkage is limited or made to be generally negligible, unlike shrinkage which may occur in normal cement-type products.

Protective coating 18 may also be added to pole 10, for the purpose of enhancing ultraviolet protection and corrosion resistance and to produce a smooth surface. The coating 18 is applied during the manufacture of the pipe and is at least 0.001 inch thick. Protective coating 18 is clear, can be made with or without pigments, and includes specific ultraviolet absorbers and/or shields. An example of such a coating could be "Amerisield" as manufactured by Ameron Corp. or "Tefcote" as manufactured by DuPont.

The composite pole of the present invention can furnish bending strength equal to or greater than Schedule 40 steel pipe (ASTM A-106) of the same diameter, and its inherent corrosion resistance is far superior to that of steel. Moreover,

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the present invention actually furnishes a pole which will flex more than twice as far as steel and return to its original shape without failure.

FIG. 2 shows another embodiment of a composite pole structure 100 of the invention. As shown, the inner surface 110 of the pipe 140 is roughened to form a regular or irregular pattern therein. In the illustrated embodiment, the inner surface 100 includes an irregular pattern defining a plurality of recesses 112 which increases the surface area contact between the core 120 and the pipe 140 when the core 120 hardens within the pipe 140. Thus, a portion of the core 120 is disposed in the recesses 112 defining a mechanical lock between the core 120 and the pipe 140. The core 120, pipe 140, veil 160 and coating 180 are otherwise identical to the embodiment of FIG. 1. Alternatively, as shown in FIGS. 4a and 4b, instead of the recesses, ridges 112' or 112 can be molded or otherwise formed into the inner surface 110 of the pipe 140. The ridges may be concave 112' (FIG. 4a) or convex 112' (FIG. 4b) and may be in a regular or an irregular pattern. It can be appreciated, however, that the core 120 need not be of the type which expands its volume when it hardens to provide a force fit with the pipe 140, since the mechanical lock provides the desired locking of the core 120 to the pipe 140. Thus, a conventional type cement material may be employed as the core material in this embodiment of the invention. It can also be appreciated that the core material may be of the type discussed above, in which shrinkage is limited during hardening thereof.

FIG. 3 shows yet another embodiment of a composite pole structure 200 of the invention. As shown, an adhesive 250 is coated on the inner surface 212 of the tube 240 such that when the core 220 hardens it is chemically locked with respect to the pipe via the adhesive 250. The adhesive 250 is preferably SIKADUR 3200 manufactured by Silca. However, any type of adhesive suitable for securing the resin pipe 240 to the hardened core may be employed. The core 220, pipe 240, veil 260 and coating 180 are identical to the embodiment of FIG. 1. It can be appreciated, however, that the core 220 need not be of the type which expands its volume when it hardens to provide a force fit with the pipe 240, since the chemical lock provides the desired locking of the core 220 to the pipe 240. Thus, a conventional type of cement material may be used as the core material in this embodiment of the invention. It can also be appreciated that the core may be of the type discussed above, in which shrinkage is limited during hardening thereof.

Tests were performed to determine the push-out strength or frictional resistance of the core material to the inner wall of the composite pole structure. The total load in pounds required to dislodge the core from the hollow tube was measured and divided over the unit area and represented in units of psi. The average frictional resistance of the core made in accordance with the embodiment of FIG. 1, (no mechanical or chemical locking of the core) was measured to be on average 25 psi over the entire inner wall surface of the pipe. With the addition of an adhesive 250 bonding the core 220 to the pipe 240 (FIG. 3) the average frictional resistance of the core was determined to be approximately 90 psi. Thus, there is a corresponding minimum increase in bending strength of approximately 30% as a result of a better bond between the core and the pipe which provides for a better transfer of shear between the structural component parts. With both expansion of the core 220 and the use of the adhesive 250 (FIG. 3), failure of the composite structure is often in the cohesive strength of the core 220 itself. Namely, the cohesive strength of the bond between the core and pipe can be stronger than the cohesive strength of the core 220.

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Additives 20 may be included in the core of the invention to improve the composite pole structure. For example, silica fume, an extremely fine aggregate that fills tiny voids in the core may be added to the core to improve the compressive strength, making the composite pole structure even stronger. Steel, glass or polymer fibers additives mixed into the core could also be employed. The fibers deter cracking which cause premature failures, provide higher stiffness, provide higher compressive strength and provide higher bending strength, all of which enhance the performance of the composite pole structure.

FIGS. 5a and 5b show other embodiments of the invention, each having a roughened portion on at least a portion of an outside surface of at least one of the ends of the filled structure. It can be appreciated that the poles or filled structures of FIGS. 5a and 5b may be configured as disclosed in any of the embodiments of FIGS. 1-4b, but also include a roughened portion on an outside surface thereof, as explained below.

As shown in FIG. 5a, the fiber reinforced pipe 140 of pole 300 has an outer surface 310. In the illustrated embodiment, the outside surface 310 includes an abrasive adhesive 320 coated on at least one end of the pole 300. The abrasive adhesive 320 includes an abrasive such as a grit material, e.g., sand, in an epoxy, and defines a roughened portion on the outside surface 310. When the pole 300 is driven into the ground, the roughened portion creates skin friction with the ground which increases the bearing load capabilities of the pole 300 as compared to that of a smooth pole. Thus, the pole 300 may be relatively shorter than traditional material pole (smooth steel and/or concrete poles) since it does not have to be driven as deep as the traditional poles to achieve the same load bearing. The abrasive adhesive defining the roughened surface works well in mounting the pole 300 in sandy ground, particularly when the size of the grits of the abrasive closely match the size of the grits of sand in the ground.

FIG. 5b shows a pole 400 having a plurality of fiber rovings 412 wrapped about a lower portion of the fiber reinforced pipe 140 so as to extend from outside surface 410 thereof. Each of the fiber rovings 412 may be a singular fiber roving strand or may comprise a group of smaller roving strands. Thus, during manufacture of the fiber reinforced pipe 140, the fiber rovings 412 may be wrapped to extend from the outside surface 410 and cured to be integral with the pipe 140. In the illustrated embodiment, the fiber rovings 412 are disposed in spaced relation thereby defining a roughened portion on the outside surface 310. The fiber rovings 412 may be evenly or unevenly spaced. Further, the fiber rovings 412 are arranged so as to be generally perpendicular to the longitudinal axis 420 of the pole 400 so as to create more driving friction than would be created if the rovings 412 were more vertically oriented with respect to the longitudinal axis 420. The fiber rovings 412 create increased skin friction when driven into the ground, resulting in the advantages noted above, with reference to the embodiment of FIG. 5a. The fiber rovings 412 have been found to provide a pole having good load bearing capabilities in muddy soil or clay.

In the illustrated embodiments, only a portion of poles 300 and 400 near an end thereof is roughened since one end portion is typically driven into the ground when the pole is used as a piling. In piling applications under water, the portion of the pole exposed to water is preferably smooth to prevent biological attack from mollusks, barnacles and the like, which have a more difficult time attaching to a smooth surface.

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Although two examples of surface roughening have been described above, it can be appreciated that the pole of the invention may be roughened any amount to produce increased skin friction with the ground.

It is to be understood that the form of this invention as shown is merely a preferred embodiment. Various changes may be made in the function and arrangement of parts; equivalent means may be substituted for those illustrated and described; and certain features may be used independently from others without departing from the spirit and scope of the invention as defined in the following claims.

For instance, structures may be produced without either veil 14 or protective coating 16 when the application does not require ultraviolet protection. Moreover, the diameter and cross sectional configuration of the external member may, of course vary, and the particular formula of the core could be changed as long as the requirements of the claims are retained. Further, although a generally round cross-sectioned pipe is disclosed, the composite structure may be in any shape or closed section, such as, for example a square, rectangular, oval etc. cross-section.

What is claimed is:

1. A filled structure characterized by the combination of high compressive strength and tensile strength to allow a high bending load, the filled structure comprising:

a fiber reinforced resinous hollow structure having a tensile strength of at least 30,000 psi, and an inside surface forming a boundary which defines a space, and
a hard core within said space, the hard core having a density of at least 35 pounds per cubic foot and a compressive strength of at least 1500 psi, the hard core being formed from a mixture of particulate cementitious material and liquid such that when said mixture hardens, said hard core is joined securely to said inside surface of said hollow structure.

2. The filled structure of claim 1, wherein said mixture is such that it expands its volume as it hardens, expansion of the mixture being restrained by the hollow structure and the hard core exerts a force against the inside surface of the hollow structure.

3. The filled structure of claim 1, wherein the hollow structure is a closed section.

4. The filled structure of claim 1, wherein the hollow structure is a cylindrical pipe having fiberglass rovings therein.

5. The filled structure of claim 1, wherein the mixture from which the core is formed includes a Portland cement.

6. The filled structure of claim 5, wherein the mixture from which the core is formed includes stone, sand, water, Portland cement and an additive which causes expansion of the mixture as it hardens.

7. The filled structure of claim 1, further including a coating attached on the outside of the hollow structure with the coating comprising a material which absorbs or shields ultraviolet radiation.

8. The filled structure of claim 1, wherein said hard core includes material therein selected from the group consisting of silica fume, metal, glass and polymer fibers.

9. The filled structure of claim 1, wherein said hollow structure has fiber rovings throughout an entire thickness thereof.

10. The filled structure of claim 1, wherein said hard core is of material such that shrinkage thereof is negligible upon hardening.

11. A filled structure characterized by the combination of high compressive strength and tensile strength to allow a high bending load, the filled structure comprising:

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a fiber reinforced resinous hollow structure having a tensile strength of at least 30,000 psi, and an inside surface forming a boundary which defines a space, and a hard core within said space and engaged with said inside surface, the hard core having a density of at least 35 pounds per cubic foot and a compressive strength of at least 1500 psi, the hard core being formed from a mixture of particulate cementitious material and liquid.

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12. The filled structure according to claim 11, wherein said mixture is such that it expands its volume as it hardens, expansion of the mixture being restrained by the hollow structure and the hard core exerts a force against the inside surface of the hollow structure.

* * * * *

Exhibit B

IN THE UNITED STATES BANKRUPTCY COURT
FOR THE DISTRICT OF DELAWARE

IN RE:

HARDCORE COMPOSITES : Case No. 04-11862 (MFW)
OPERATIONS, LLC,

Debtors

ORIGINAL

Deposition of WILLIAM SCOTT HEMPHILL taken pursuant to notice at the law offices of Seitz, Van Ogtrop & Green, 222 Delaware Avenue, Suite 1500, Wilmington, Delaware, beginning at 10:03 a.m., on Tuesday, October 12, 2004, before Allen S. Blank, Registered Merit Reporter and Notary Public.

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8 For - United States Trustee

9 * * * * *

10 WILLIAM SCOTT HEMPHILL,
11 the deponent herein, having first been
12 duly sworn on oath, was examined and
13 testified as follows:

14 BY MR. WERNER:

15 Q Sir, would you please state your full name?

16 A William Scott Hemphill.

17 Q Mr. Hemphill, I introduced myself briefly
18 before we got started. My name is George Werner. I'm
19 an attorney and I represent Lancaster Composite, Inc.

20 This is a deposition in connection with the
21 bankruptcy proceeding around some claims of Lancaster
22 Composite, Inc., against Hardcore Composites. During
23 the course of this deposition, I will be asking you a
24 series of questions. If at any time you haven't heard
or don't understand my question, please tell me and



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WILLIAM SCOTT HEMPHILL

1 I'll repeat it or explain it as necessary. Do you
2 understand that?

3 A Yes.

4 Q Your attorney is here with you. If at any
5 time you wish, you can stop the formal question and
6 answer session and discuss what you want to discuss
7 with him before proceeding in answering my question.
8 Do you understand that?

9 A Yes.

10 Q One of the other rules that we usually give
11 is we ask that you answer questions with a word as
12 opposed to simply gestures or nods. Sometimes there
13 will be confusion as to what that gesture or nod is.
14 So if during the course of the deposition you could use
15 actual words, that will facilitate the reporter's job
16 in taking down what you say. Do you understand that?

17 A Okay.

18 Q I'm not certain how long we will be here.
19 But certainly if for any reason you wish to take a
20 break, just to stretch, take a walk outside, whatever,
21 just let me know and I'll accommodate that request as
22 well. Do you understand that?

23 A Yes.

24 Q Sir, by whom are you currently employed?



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WILLIAM SCOTT HEMPHILL

1 A Hardcore Composite Operations, LLC.

2 Q And what is the business address of
3 Hardcore?

4 A 618 Lambsons Lane, New Castle, Delaware.

5 Q And what is your position there, sir?

6 A President.

7 Q And currently in that position, what are
8 your duties? What are you actually involved in on a
9 day in and day out basis as president of the company?

10 A I oversee the general operations of the
11 business.

12 Q Are there any particular aspects of the
13 business that you focus on one side more than the
14 other, sales, marketing, anything?

15 A All of it.

16 Q How long have you been with the company in
17 any position or capacity?

18 A Since 1997.

19 Q And how long have you been president of the
20 company?

21 A Since 2002.

22 Q Do you recall what month it was that you
23 became president?

24 A No, I don't.



WILLIAM SCOTT HEMPHILL

1 Q What positions did you hold with the company
2 between 1997 and 2002?

3 A I was the project engineer, then general
4 manager.

5 Q Did you ever hold any office positions with
6 the company before becoming president in 2002?

7 A Yeah. I was vice-president.

8 Q Okay. Were you vice-president as well as
9 being either a project engineer, general manager?

10 A Vice-president as well as general manager.

11 Q When did you become general manager?

12 A '99, I believe.

13 Q Now, as general manager, was there a
14 particular aspect or portion of the business that you
15 focused on more than the other?

16 A No.

17 Q Overall business operations, then, as
18 general manager?

19 A Yes.

20 Q As I understand from the pleadings that are
21 filed in this case, the company filed for bankruptcy on
22 June 25, 2004. Is that a date we can agree to?

23 A That's correct.

24 Q Since June 25 of 2004, have your duties



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WILLIAM SCOTT HEMPHILL

1 changed at all?

2 A No, they have not.

3 Q Switching topics a little bit on you, sir.

4 You're here today pursuant to a deposition notice that

5 I served on the company in care of the company's

6 attorney, Mr. Huggett. I have had that marked as

7 Deposition Exhibit No. 1.

8 (Hemphill Deposition Exhibit No. 1 was

9 marked for identification.)

10 BY MR. WERNER:

11 Q Have you seen this deposition notice?

12 A Yes, I have.

13 Q The deposition notice indicates that I'm

14 going to be inquiring about several areas and they are

15 noticed as areas one through eight or topics one

16 through eight. Have you reviewed the eight topics or

17 eight areas that I noticed for purposes of this

18 deposition?

19 A Yes, I have.

20 Q Are you the person within Hardcore who is

21 most knowledgeable as to each of those eight topics or

22 eight subject areas?

23 A Yes, I am.

24 Q Now, in preparation for today's deposition,



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WILLIAM SCOTT HEMPHILL

1 sir, did you review any documents?

2 A I reviewed documents pursuant to your notice
3 of deposition.

4 Q What documents did you review?

5 A I reviewed all the documents that pertain to
6 items one through eight.

7 Q I'm trying to get a sense of what documents
8 those are. Let me approach this from a different
9 direction.

10 In response to some specific discovery
11 requests that we had sent to the company, we were
12 provided with some quotes. And I believe there were
13 three different quotes from the company.

14 I assume you reviewed those three documents
15 as part of the process of getting ready for the
16 deposition, is that correct?

17 A Yes, I did.

18 Q Did you review any other documents to
19 prepare for today's deposition?

20 A No. Those are the documents that were
21 pursuant to your request.

22 Q Other than your counsel, did you consult
23 with anyone in preparation for today's deposition?

24 A No, I did not.



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1 Q All right, sir. I'm going to switch topics
2 again a little bit on you.

3 Are you familiar with the web site that's
4 currently posted by Hardcore?

5 A Yes.

6 Q And the information that is contained on
7 that web site?

8 A Yes.

9 Q I'm not going to have this marked. We'll
10 see how much of this you're actually familiar with as
11 we go through this. And certainly if counsel wants to
12 take a look at that, he is welcome to.

13 I have printed hard copies of some of the
14 pages of the web site. I'm going to be asking you
15 about some of those. And first of all ask, after your
16 attorney looks at it, for you to take just a general
17 review of that.

18 That is not everything that's on your web
19 site. It's about half or three-quarters of what's on
20 your web site. But I'm going to ask you if that looks
21 generally familiar to you?

22 A Yes, it does.

23 Q As far as you know, is the information
24 that's contained on your web site and contained within



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1 those pages accurate with respect to Hardcore?

2 A Yes.

3 Q It may just be easier if we do have this
4 marked as a deposition exhibit.

5 (Hemphill Deposition Exhibit No. 2 was
6 marked for identification.)

7 BY MR. WERNER:

8 Q Sir, I have had marked as Deposition Exhibit
9 No. 2 a document consisting of eight pages, which are
10 various pages from your web site. And you have already
11 indicated you have reviewed that and they are portions
12 of what appears on your web site.

13 If you would go to the fifth page, the
14 heading is, Composite Piles?

15 A Yes.

16 Q Is that a product that is manufactured or
17 fabricated by Hardcore?

18 A Yes, it is.

19 Q Can you describe for me a little bit what
20 you mean by the term or what Hardcore means by the term
21 composite piles?

22 MR. HUGGETT: At this point, I'm going to
23 try to clarify with counsel. The purpose of this
24 deposition, as I understood it and as was ordered by



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1 Chief Judge Walrath, was to clarify and determine the
2 amount of potential post-petition sales and, therefore,
3 exposure in this action.

4 Is that your understanding as well? We are
5 not here to argue the merits of the claim. Is that
6 your understanding as well?

7 MR. WERNER: My understanding is that we are
8 not here to argue the permits. I think we need to
9 clarify some things about products because I'm trying
10 to get some sense of exactly what it is that Hardcore
11 has done post-petition; and, as opposed to asking for
12 all business operations since the filing of the
13 petition, I'd like to have some idea of products and
14 get some clarification.

15 MR. HUGGETT: Well, ask a question.

16 BY MR. WERNER:

17 Q My question was simply what do you/Hardcore
18 mean by the term composite pilings?

19 A Pilings made out of composite material.

20 Q Any pilings, all pilings?

21 A Pilings.

22 Q Are you familiar with the interrogatories
23 and requests for production of documents that were
24 served upon Hardcore in connection with the pending



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1 bankruptcy proceeding? Your counsel appears to have a
2 copy there.

3 A Yes, I am.

4 Q If you would go to the interrogatories. And
5 if you would go to the fourth page, numbered page four
6 at the bottom. Do you have that?

7 A Yes.

8 Q We are on the middle of the definitions, at
9 the end of the definitions section and there was used
10 in the interrogatories a term composite product and it
11 was defined in paragraph letter K. Do you see that?

12 A Yes.

13 Q Now, my question is, from Hardcore's
14 perspective, is composite product, does that mean the
15 same to you as the term composite piles as it appears
16 on your web site?

17 A Your definition of under the term K I think
18 is not something that we would be familiar with or we
19 would use. So that's not --

20 Q So you don't know what's meant by the term
21 composite product as defined in paragraph K?

22 MR. HUGGETT: That is certainly not what he
23 said.

24 THE WITNESS: That is not what I said. What



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1 I said was you have a definition there and I'll treat
2 your definition of composite products accordingly.

3 BY MR. WERNER:

4 Q Well, what I'm asking you is how is my
5 definition or the definition of composite products
6 different than your definition of composite piles?

7 A I'm not an expert on your definition of your
8 product. So I can't make that conclusion.

9 Q I'm not asking for anything technical. I'm
10 just asking for your understanding of what the
11 difference is between our term composite product and
12 Hardcore's term composite piles?

13 A I will answer the question again. I'm not
14 an expert on your terminology. So I can't define your
15 terminology for you.

16 Q At least as you understand it, would our
17 terminology or term composite product include
18 everything that you identify or define as a composite
19 pile?

20 A No. I will not agree to your statement that
21 you just said. What I will continue to say is that you
22 asked me what a definition of a composite pile was
23 according to us and you have your definition and they
24 stand that way.



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1 Q And what I have asked you is for at least
2 your understanding of what our terminology is and your
3 terminology is, what's the difference?

4 A I will repeat that I do not understand your
5 terminology of it. So I can't comment on that.

6 Q How did you set about answering our
7 interrogatories if you didn't understand what our term
8 composite product meant?

9 A Because I answered your interrogatories to
10 the best of our knowledge, which is any of the
11 product -- any of the piling products that we have done
12 since the 25th of June, 2004.

13 Q Any pile?

14 A As we define them.

15 Q So that's what I'm asking. How do you
16 define them, then?

17 A As our web site states, tubular composite
18 structure.

19 Q As it appears on the fifth or sixth page of
20 the web site, the exhibit that you have in front of you
21 there?

22 A Yes.

23 Q Go back to the previous two pages back.
24 There is a page, and that would be the third page in



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1 the exhibit that I have prepared as Exhibit 2. Again,
2 a page from your web site. It has marine applications.
3 And the first one identified there is composite
4 monopiles. Do you see that?

5 A Yes, I do.

6 Q As Hardcore uses the term composite pilings.
7 Does a composite monopile, is that included within the
8 term composite pilings?

9 A Well, monopiles is a very large diameter
10 singular pile.

11 Q Okay. I understand. And I appreciate your
12 giving me that definition.

13 What I'm asking you is, when Hardcore uses
14 the term composite piles, does that include anything
15 that Hardcore would manufacture called composite
16 monopile?

17 A Yes, it does.

18 Q Moving down that line. The next term
19 defined there explains something called a fender pile.
20 Do you see that?

21 A Yes.

22 Q Does Hardcore include, when it uses the term
23 composite piles, what it's defining here as fender
24 piles?



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1 A Yes, it does.

2 Q The next term is fender panels. Would they
3 be included within the terminology of composite piles?

4 A No, they would not.

5 Q Because fenders are not piles?

6 A Correct.

7 Q Moving down, the next term is dolphin
8 systems. Are dolphin systems included within the
9 terminology composite pilings?

10 A No, they are not.

11 Q The last term defined here is hard shell
12 pile strengthening and protection systems.

13 Are whatever you're describing there
14 included within the terminology of composite piles?

15 A No, they are not.

16 Q Are there any other products that Hardcore
17 either manufactures or fabricates that we haven't
18 identified here but would be included in the
19 terminology of composite piles?

20 A No, there are not.

21 Q I'd like to switch topics, then, and get a
22 little sense of what Hardcore's business operation,
23 what's been happening with Hardcore since June 25 of
24 2004.



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1 I see in your web site here mention of
2 design build. Has Hardcore been involved in any design
3 build projects since June 25 of 2004?

4 A No, we have not.

5 Q In terms of what has happened since June 25
6 of 2004, has Hardcore bid to any owners as opposed to
7 contractors on the composite pilings?

8 A I don't believe so.

9 Q Since June 25, 2004, Hardcore has bid to
10 contractors on composite pilings?

11 A Correct.

12 Q Now, since June 25 of 2004, has Hardcore
13 manufactured any composite pilings?

14 A No, we have not.

15 Q Has Hardcore delivered any composite
16 pilings?

17 A No, we have not.

18 Q Has Hardcore sold any composite pilings?

19 A No, we have not.

20 Q And we are going to be talking about the
21 quoted bid. I just don't want to have any question
22 about the terminology. In your mind, is there any
23 difference between bidding or quoting?

24 A No. They are interchangeable.



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1 Q So I can just use the one term and you'll
2 include whether it was a bid or a quote. We'll just
3 use that. And if I were to ask the same series of
4 questions that I just did about manufactured, sold,
5 delivered or quoted, but changed it from composite
6 pilings to composite products, the term we use, would
7 you have answered anything differently?

8 A Well, I don't understand the term you used.
9 So I can't comment on that. I commented on that before
10 already.

11 Q All right.

12 (Hemphill Deposition Exhibit No. 3 was
13 marked for identification.)

14 BY MR. WERNER:

15 Q I show you what I have had marked as
16 Deposition Exhibit 3. And you're welcome to take a
17 look at that. Those are the three or copies of the
18 three quotes that we were provided in response to our
19 discovery requests. I'm going to ask you if they look
20 familiar to you?

21 A Yes.

22 Q All right. And although I have
23 characterized them, perhaps it would be better for you
24 to characterize. What are these three documents that



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1 we are looking at here that are marked as Exhibit 3?

2 A Three quotes that were produced in response
3 to the deposition announcement or request.

4 Q The first that I have in sequence has a
5 quote date of July 23, 2004. Do you see that?

6 A Yes, I do.

7 Q The copy that we had, unfortunately, had a
8 line down the left column under the quantity. And I'm
9 going to ask you if you could just read for us what's
10 in the quantity column to make sure that we have
11 accurate information. So let's start with the number.
12 Is that five thousand what?

13 A Something.

14 Q All right. You can't read our copy any
15 better than we could?

16 A No.

17 Q Do you have a recollection of what the
18 number is?

19 A No, I do not.

20 Q But the number is five thousand something as
21 opposed to fifty thousand or five hundred?

22 A Correct.

23 Q What is the status of this bid? By that I
24 mean is it still open or has the contractor already



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1 accepted somebody else's bid or what is the status?

2 A It's still open, as far as I know.

3 Q As far as you know.

4 Now, what was your involvement specifically
5 on this bid, if any?

6 A I prepared it.

7 Q You prepared the bid?

8 A Um-hmm.

9 Q Did you have any dealings with the
10 contractor?

11 A Just over the phone.

12 Q Now, you have not indicated the project.
13 But what is the general location of the project?

14 A I'm not at liberty to answer that. I
15 thought we cleared those terms up initially.

16 Q I don't think we have agreed to that. But
17 you're indicating that you're not going to answer the
18 question as to where this project is?

19 A Correct.

20 Q What about in terms of the total dollar, not
21 unit price but what's the total dollar value of the
22 project?

23 A Again, that's part of the agreement that our
24 attorney and your guys struck. So I'm not commenting



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1 on that either.

2 Q I'll just state for the record, we didn't
3 necessarily agree to that. You simply turned this over
4 without providing information at this time. We think
5 it is relevant for purposes of the motion that we are
6 going to be presenting to the Court.

7 But you're declining to answer that question
8 as well?

9 A Correct.

10 Q The second quote is dated July 27, 2004. Do
11 you see that?

12 A Yes.

13 Q Again, in the quantity section, we have some
14 trouble reading the numbers. Can you look at that and
15 tell us what the first number is, the quantity?

16 A I believe that's a two.

17 Q Is that quantity being --

18 A A two.

19 Q 2,128?

20 A Yep.

21 Q And do you recall that that is the quantity
22 as opposed to twenty thousand or some number in the
23 hundreds?

24 A No, I believe that that's 2,128.



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1 Q Okay. What about the next block, the
2 number? It looks like there is a number before the 40.
3 But that number was obliterated?

4 A I believe that's a six.

5 Q The next block, is that the same 2,128?

6 A Yes.

7 Q And then the next block, there is a 40.
8 Would that again be 640?

9 A Correct.

10 MR. HUGGETT: In each case, can you tell by,
11 for example, multiplying 56 by 38 in the first one and
12 in the second one multiplying 16 by 40 and so on? Do
13 you understand what I'm saying?

14 MR. WERNER: Yes, I understand what you're
15 saying.

16 BY MR. WERNER:

17 Q The same question as to the location of this
18 project. You're not going to answer that question?

19 A Correct.

20 Q And the total dollars of the project?

21 A Correct.

22 Q Okay. What is the status of this project?

23 A It's also open.

24 Q What was your involvement in this project in



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1 terms of preparing your bid, communicating with the
2 owner? Were you involved in that personally?

3 A Yes, I was.

4 Q Did you have communications with the
5 contractor in this case?

6 A Yes, I did.

7 Q The third quote is dated August 9 of 2004.
8 Do you see that?

9 A Yes, I do.

10 Q This one is a little bit clearer but I just
11 want to be certain of the quantity. Is that 3,360
12 feet?

13 A Correct.

14 Q And what is the status of this project?

15 A Again, it's open.

16 Q What was your involvement in this project?

17 A I prepared the quote.

18 Q Did you have direct communications with the
19 contractor?

20 A Yes, I did.

21 Q The location or name of the project, can you
22 tell us that?

23 A I'm not going to say.

24 Q The dollar value of the project?



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1 A I'm not going to say.

2 Q Other than these three projects that are
3 identified by these quotes, are there any other
4 projects on which Hardcore has bid for composite
5 pilings since June 25 of 2004?

6 A No, there is not.

7 Q And you're certain of that?

8 A I am certain of that. I answered the
9 question as best as we can and that's all there is.

10 Q What did you do in terms of preparing or
11 researching to obtain information to answer those
12 interrogatories?

13 A I went to our quote file and looked up all
14 the quotes we have done since the 25th of June and
15 pulled out any that had anything to do with piles.

16 Q Now, you indicated that you were personally
17 involved in all three of these quotes, correct?

18 A Correct.

19 Q The ones that are identified in the exhibits
20 here.

21 Are there other individuals within your
22 operation that are involved in the quote process that
23 deal directly with contractors and communicate with
24 contractors?



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1 A Well, you just asked two questions. Which
2 question would you like answered?

3 Q All right. Let's say that are actually
4 involved with communicating with the contractors as
5 opposed to back room helping prepare the quote. I'm
6 interested in whether or not there is anyone else in
7 your operation that's involved in communicating with
8 the contractors?

9 A No, I'm the one that does most all the
10 communication.

11 Q From your perspective, would it be fair to
12 state that a quote cannot go out to a contractor
13 without your having reviewed it and have some input on
14 the quote?

15 A That's absolutely the case.

16 (Hemphill Deposition Exhibit No. 4 was
17 marked for identification.)

18 BY MR. WERNER:

19 Q I show you what is marked as Deposition
20 Exhibit 4, and ask you to take a look at that. Let me
21 know when you have had a chance to review that
22 document, sir.

23 Have you had a chance to review what I have
24 had marked as Deposition Exhibit No. 4?



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1 A Yes.

2 Q What is that, sir?

3 A It's a quote.

4 Q From Hardcore?

5 A Yes.

6 Q For composite piling?

7 A Yes.

8 Q After June 25, 2004?

9 A Yep.

10 Q But not identified by you in either
11 interrogatory answers or in response to my deposition
12 question a few moments ago?

13 A Correct.

14 Q Why is it that it was not identified?

15 A I believe this is just a requote of another
16 project but I can't be certain.

17 Q A requote of which project?

18 A I won't comment.

19 Q One of the three that are represented by the
20 three documents that you did provide?

21 A No.

22 Q And what, in your mind, made it that a
23 requote was something that didn't need to be produced
24 or identified in response to my interrogatories?



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1 A Because you specifically asked for jobs that
2 were quoted after the 25th of June.

3 Q And in your mind, a requote is not a quote?

4 A Correct.

5 Q Are there any other jobs that have been
6 requoted since June 25 of 2004?

7 A No.

8 Q There is an indication in the bottom
9 left-hand corner here that a copy of this was sent to
10 you. Do you see that?

11 A Yes.

12 Q Did you receive a copy of this on or about
13 September 15th, 2004, when the quote was prepared?

14 A Yes.

15 Q And would we find a copy of this in your
16 quote file that you said you went and looked at before
17 you responded to my interrogatories?

18 A Yes.

19 Q What's the status of this project?

20 A It's open.

21 Q Are there any other projects, whether they
22 are quoted, requoted, triple quoted, any other way you
23 want to look at it, any other projects that you put a
24 bid out for, Hardcore put a bid out for, since June 25



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1 of 2004?

2 A Pertaining to what?

3 Q Composite pilings.

4 A No.

5 Q Are you familiar with a project in
6 California that may be referred to by different people
7 in different ways but the California transportation
8 bridge number one?

9 A Do you have another name for it?

10 Q It's in the San Francisco area. It went to
11 bid. Bids were sent out last week.

12 A Yes, I am.

13 Q Was a bid by Hardcore put out for that
14 project?

15 A Yes, it was.

16 Q Now, why was that not identified in response
17 to my interrogatories and my deposition questions?

18 A Because it's got nothing to do with piles.
19 Period.

20 Q You're saying the bid you put out last week
21 or that Hardcore put out last week has no composite
22 pilings involved at all in the bid?

23 A There is no composite pilings involved in
24 that bid.



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